Center for System Engineering

Status Briefing
26 Aug 2003

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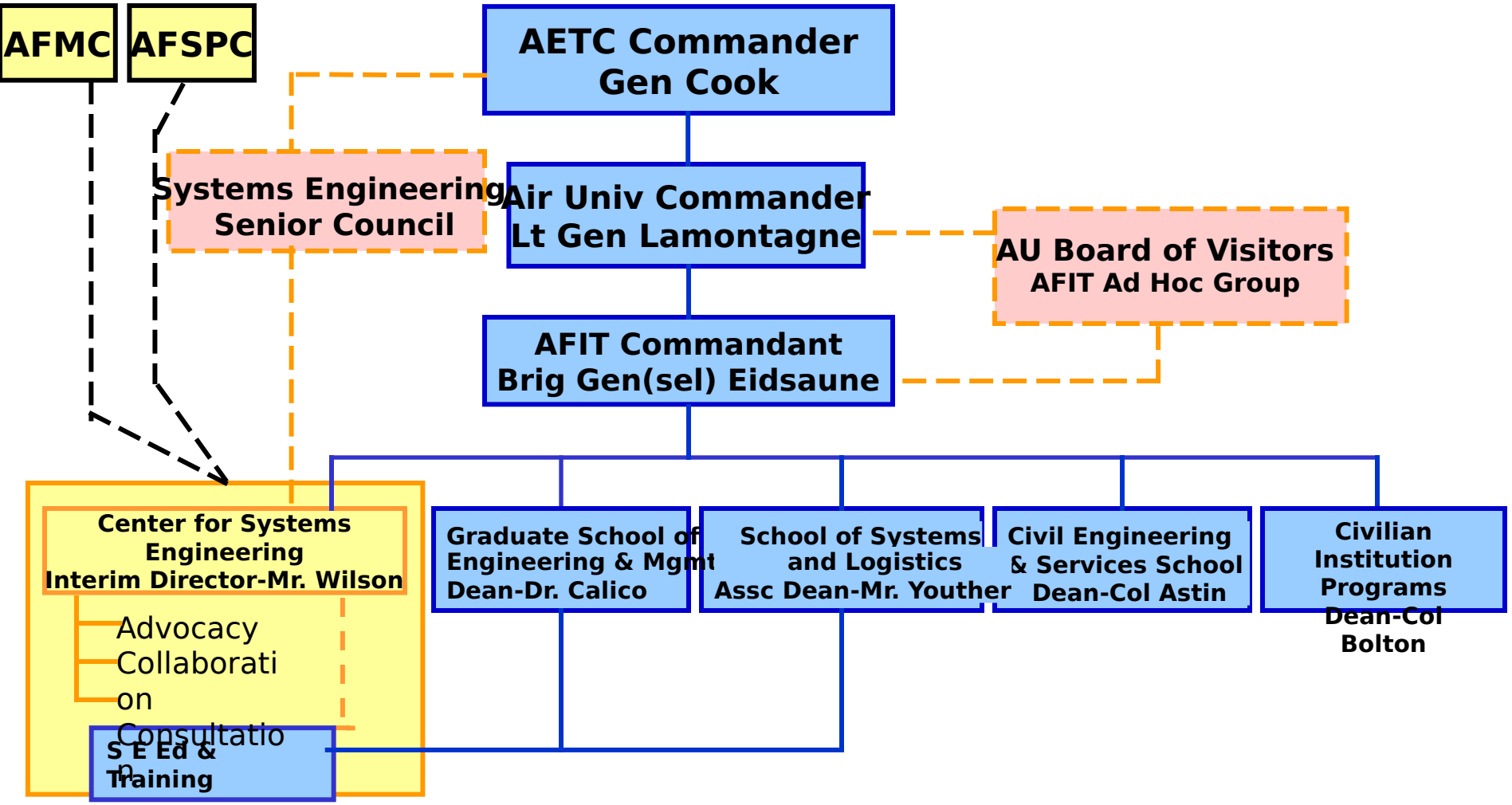
Background

- Direction from the SECAF
- Develop Plan to strengthen Air Force's systems engineering capabilities
- "Create an Institute for Systems Engineering"

Vision

To be the nationally recognized Center of Excellence for Systems Engineering, accommodating the complete spectrum of Systems Engineering from theory to practice as it applies to Department of Defense weapon systems.

New AFIT Organization



Roles

- Advocacy
  - Promulgate and document SE case studies
  - Identify/catalogue/develop SE Standards and tools in use
  - Identify and evolve the essential core SE Processes
  - Institutionalize Systems Engineering across the USAF

- Collaboration
  - Promote collaborative efforts in Systems Engineering across the USAF, Navy, Army, Marine Corps, OSD, MAJCOMS, Industry, Professional Organizations and Academia
    - Best practices
    - Core processes
    - Encouraging the study of systems engineering

Roles (cont'd)

- Consultation
  - Conduct studies & analyses on many systems engineering issues
  - Provide systems engineering expertise to Advisory Boards and Review Panels (AF Program Offices)

- Education and Training
  - Help shape the academic curriculum for SE
  - Provide the training for USAF needs throughout the life cycle

CSE Products

Systems Engineering Definition

"An interdisciplinary approach encompassing the entire set of scientific, technical and managerial efforts needed to evolve, verify, deploy and support an integrated and life-cycle balanced set of system solutions that satisfy customer needs."

CSE Products

- “Robust” Development Process Guidance
- Samples of how to apply good Systems Engineering
- Tools, process, practices – access to existing Tools via WEB and new development ideas
  - Collaboration with INCOSE, NDIA

CSE Products

- Case studies
  - Case Study Working Group Established
  - Teams formed to Study the following programs
    - C-5 Weapon Systems
    - F-111 Weapon Systems
    - The Hubble Telescope System
    - Theater Battle Management Core System
  - Looking for future candidate case study topics for C3I/Armament/Space

CSE Products

- Development Program
  - To develop future systems engineers
  - Organization sponsored assignments
    - One to two year rotation assignments
    - Sponsoring organization owns position and person
    - Operating locations established at AFIT for Government employees
    - Systems Engineering Certificate Program Pays Permanent Change of Station Costs for Government employees
    - Welcome participation from Industry
  - Broadening experience
    - Case study development
    - Refinement of tools, processes, practices
    - Systems engineering projects in System Program Offices
    - Mentorship by experienced systems engineers
    - Access to academic programs free
  - First Rotational Engineer Started 25th Aug
    - From Ogden Air Logistics Center
  - Terrific Development Opportunity
    - There is room in this program for more engineers

CSE Products - Academic

- Academic programs
  - PhD Tailored to student interest
  - MS 18 mo full time, 4 Core Systems Engineering Courses plus electives and group project
  - Graduate certificate program Part-time, 4 Core Systems Engineering Courses plus one quarter group project
- Provide accessibility through Advanced Distributed Learning (ADL)
- Developing Academic Alliances with institutions across USA to offer nearby USAF members/employees graduate degrees
  - University of New Mexico
  - University of Florida

CSE Products - Academic

- SE Orientation – Targeted for All Employees
  - Phase I 1-2 Hr Product Centers Under 15 years
  - Phase II 1 Hr Executive Course Over 15 years
  - Phase III 1-2 Hr Logistic Centers Under 15 years
  - Distance learning Courses
    - SE Orientation
    - SE 101 for Non-engineers
- Applied SE Management One Week for Program Teams/Non-Engineers
- SE Management 2 Week Version of Graduate Course SENG 510 – Targeted for Engineers
- AF Architecture Short Courses being Developed

Summary

- CSE at AFIT Bldg 641, Rooms 324 & 328
- First Case Studies Available early next year
- Second cycle for degree and certificate graduate program started with updated curriculum
- Opportunities Exist Now for Organizations to send engineers to CSE Development Program